brain was 67.5 cm., and the greatest breadth 20 cm. Hemispheres with thin walls which collapsed on withdrawal of the fluid. The main portion of the specimen was hardened in bichromate and preserved in alcohol, while small portions of one hemisphere were prepared by other more special methods. The gyri were unusually long and broad, well rounded, though but slightly prominent, the sulci very shallow. The lateral ventricles were enormously enlarged; the hemispheres thin-walled, and showing at places on the internal surface ridges of medullary substance. Corpus callosum and fornix were represented by the merest remnants; the septum lucidum by its pedunculi. The third ventricle was much enlarged, and the soft commissure was wanting. The hemispheral wall was from $\frac{1}{2}$ to 4 cm. thick; the cortex 2—3 mm. thick. A centrum ovale did not exist. Careful measurements are given of the basal ganglia, interbrain, midbrain, hind-brain, and after-brain—all symmetrical. A microscopical examination of the cortex by the methods of Exner and Weigert showed a normal development of the fibers, save that those of the first (zonal) layer were unusually slender. The ganglion cells were abundant and no change in them, even in the motor regions, could be determined. The pathological changes in the crura and parts lying caudad were the complete obliteration of the central canal and degeneration in the pyramidal tracts. The great slenderness of the first layer of cortical fibers is explained as the result of stretching. The cortical speech center was incompletely developed. The secondary degeneration of the pyramidal tracts was associated with the loss of the subcortical medullary substance, as has been shown in other cases of hydrocephalus, with paralysis and contracture. Degeneration in the cord mainly affected the fibers for the lower limbs, as was to be expected, and with this was also associated the very poor development of the central gyri in their dorsal third.

Ueber Hirngewichte bei Geistesschwachen. WULF. XXIII Jahresversammlung des Vereins Hannover'scher und Westphälischer Irrenärzte zu Hannover, Mai, 1889. Abstracts by Bruns in Neurolog. Centralbl., No. 10, 1889.

The result of weighing 205 brains of idiots and imbeciles is given as follows:

1. Average weight in men greater than in women. 2. Average weight in cases of mental weakness is less than in any other form of mental disease, except, perhaps, general paralysis in women. 3. In mental weakness the brain reaches its maximal weight earlier (earlier too in men than in women) than in normal individuals or those suffering from other forms of mental disease; the decrease in weight also commences earlier. 4. The weights of the fore-brain have the same relation as those of the entire brain, both in men and women. 5. The weight of the cerebellum is abnormally small, and small, too, relatively to that of the fore-brain and the entire brain. 6. In relation to the size and weight of the body the weight is as in normal persons, *i. e.*, in general the brain weight increases with the size and weight of the body. On the other hand, there is relatively an inverse relation in that persons of small body weight have a relatively heavier brain and *vice versa*. The same is true in relation to the height. 7. Epileptics with mental weakness have a smaller brain than those not epileptics. Measurements of the head showed that mental weakness was strongly associated with brachycephalic skulls.

Ein Beitrag zur Kenntniss der feineren pathologischen Anatomie der Idiotie. H. KÖSTER. Neurolog. Centralbl., No. 10, 1889.

A brief review of the literature of the anatomy of the brains of idiots is followed by a short account of K. A. S. whose arrested development

led to idiocy. Death at twenty-six years. Makroscopically the brain showed nothing abnormal. The cortex from different portions was examined microscopically. The abnormalities here found were: increase of neuroglia substance; distention of the perivascular and pericellular lymph spaces, atrophy of a number of ganglion cells, also pigmentary degeneration and vacuolization of many of them, and especially and particularly irregularity in the position of the pyramidal cells both with reference to the other layers and with reference to one another; finally hypertrophy of the vessels. The hypertrophy of the connective tissue and the atrophy of a number of ganglion cells were certainly pathological changes. The pigmentary degeneration in the case was also pathological for normally there is no such deposition of pigment in a person so young. The vacuolization was present, but whether pathological or not, the author leaves undecided. The displacement of the pyramidal cells certainly existed during life. Köster then balances the evidence in this case for and against the existence of enlarged pericellular spaces during life and concludes from the fact that there is an abnormal tendency for the pericellular spaces in many cases to fuse with one another, thus bringing two cells within one space, that the appearance is pathological and not an artefact. Of all these peculiarities there is only one, namely, the displacement of the pyramidal cells, which is not found in other forms of mental disease. This displacement consisted in a deviation of the cells, without uniformity, by which the long axes, instead of being vertical to the cortical surface and nearly parallel to one another, came to lie in any position with reference to this surface. Such an arrangement has been observed in other cases by Betz and Bernhardini, and the author points out that this variation should be particularly looked for in similar cases in order to determine the constancy of its occurrence. The paper has two figures showing ganglion cells, lymph spaces and vessels. ("*Axencylinderfortsatz*" is the word used to designate the conical prolongation of the pyramidal cells. REV.)

Beschreibung dreier Mikrocephalen-Gehirne nebst Vorstudien zur Anatomie der Mikrocephalie. Abtheilung I. Dr. F. MARCHAND. Nova Acta d. Kaiserl. Leop.-Carol. Deutschen Akademie der Naturforscher. Bd. LIII, No. 3. Rev. in Neurolog. Centralbl., No. 12, 1889, by P. Kronthal.

A careful study of these three cases showed the following abnormalities.

In the first: Forebrain small; great simplification and flattening of the convolutions, especially in parietal lobes. Central fissure running at right angles to the great longitudinal fissure with apparent union of the central fissure on the left side with the fissure of Sylvius. Marked development of the "Affenspalte" *(sulcus occipitalis transversus)* with well developed *operculum occipitale;* rudimentary development of the first and second occipital convolutions, which present well formed bridging convolutions as in the lower monkeys. Union of the *fissura calcarina* with the *sulcus ammonis;* excessive development of the gray matter on the convexity of the forebrain, specially of the parietal lobe and anterior central convolution with concomitant diminution of the white matter. Anomalies in the medulla oblongata in the abnormal arrangement of the gray matter of the olivary bodies in the form of several secondary olives. Moderate distention of the ventricle.

2. This specimen showed the forebrain small; great simplicity of the convolutions; exposure of a portion of the island of Reil, with incomplete development of the operculum. Central fissure nearly at right angles to the great longitudinal. The long axis of the parietal lobe, small; union of the parieto-occipital fissure with the *sulcus occipitalis transversus*, forming a deep depression between the parietal and occipital